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## Urban Development & Housing Department

### Notification

23<sup>th</sup> January, 2017

#### JHARKHAND RAIN WATER HARVESTING REGULATION, 2017.

File no. - 06/TC PO/Vividh-05/2016/ नं०वि०-644-- Increasing urbanization has resulted in greater pressure on the infrastructure needs of urban areas. The supply of adequate quantity of potable water on one hand and managing the flooding of streets during monsoon on the other, has become Herculean tasks for the ULBs. Urban areas, including major cities, are becoming increasingly dependent on ground water as Surface Water supply is inadequate and unable to cater to the needs of the entire urban population. Freshwater sources are being heavily exploited to meet the demand of the urban population. Considering this issue seriously, Government have decided to take effective measures for collection of rain water from roof tops, paved / unpaved surfaces etc. and to use it either for recharging ground water or storing it in storage tanks. For this, it has been decided that, no building permission be granted unless provision is made for Rain Water Harvesting System. Rain water harvesting is the activity of direct collection of rain water. The rain water collected can be stored for direct use or can be recharged into the ground water. Water harvested can be used for domestic use, livestock, plant production or flood control.

Accordingly, in exercise of powers conferred by Section 592 of the Jharkhand Municipal Act, 2011, the Governor of Jharkhand hereby makes the following regulation:-

#### 1. Short Title, Extent and Jurisdiction, Applicability of Regulations

- 1.1 **Title**-This regulation shall be called as *Jharkhand Rain Water Harvesting Regulation, 2017.*
- 1.2 **Extent and Jurisdiction**: It shall apply to all public, private, government institutions/ buildings in the whole state of Jharkhand.

- 1.3 **Date of coming into force:** This regulation shall come into force from the date of publication of notification in Official Gazette.
- 1.4 **Applicability of Regulations:** Jharkhand Rain Water Harvesting Regulation, 2017 shall be applicable for installation of Rain Water Harvesting Structures in all building falling within the jurisdiction of-
  - 1.4.1. All Regional Development Authorities.
  - 1.4.2. All Urban Local Bodies.
- 1.5 All existing rules, regulations, byelaws, orders that are in conflict or inconsistent with these bye laws shall stand modified to the extent of the provision of these bye laws.

## 2. **Definitions**

In this Regulation, unless the context otherwise requires: -

- 2.1 **'Act'** means Jharkhand Municipal Act-2011;
- 2.2 **'Aquifer'** is a geological formation that stores and transmits water;
- 2.3 **'Artificial'** means any man made scheme or facility that adds water to an aquifer;
- 2.4 **'Amenity'** means roads, street, open spaces, parks, recreational grounds, play grounds, gardens, water supply, electric supply, street lighting, sewerage, drainage, public works and other utilities, services and conveniences.
- 2.5 **'Applicant'** means the person, who is the owner of the land or building or has title to a land or building and includes;
  - 2.5.1 A trustee who is entrusted with or is concerned with any building;
  - 2.5.2 A receiver, executor or administrator or a manager appointed by any Court of competent jurisdiction to have the charge of or to exercise the rights of the owner; and
  - 2.5.3 A mortgagee in possession;
- 2.6 **'Authority'** means Regional Development Authority/Urban Local Bodies (ULBs).
- 2.7 **'Bore well'** means small diameter well which are generally deeper than open wells.
- 2.8 **'Dug well'** means traditionally made long diameter wells, pits excavated in the ground until the water reached, supported at the sides by RCC/Brick/Stone walls.
- 2.9 **'Ground water'** means the water retained in the inter- granular pores of soil or fissures of rock below the water table.
- 2.10 **'Open Space'** means an area forming an integral part of the plot, left open to the sky.
- 2.11 **'Rain Water Harvesting'**-The harvesting of rainwater is the collection of water from surfaces on which rain falls, and subsequently storing this water for later use. Normally water is collected from the roofs of buildings and stored in rainwater tanks. Water can also be collected in dams from rain falling on the ground and producing runoff;
- 2.12 **'Run off'**- Run off is the term applied to the water that flows away from a surface after falling on the surface in the form of rain;
- 2.13 **'Recharge'** means the process of surface water (from rain or reservoirs) joining the ground water aquifer;

- 2.14 **‘State government’**- means the government of Jharkhand;
- 2.15 **‘Stakeholders means’**-
- 2.15.1 All households and residents of urban areas,
  - 2.15.2 Educational institutions including research and development (private & public),
  - 2.15.3 All Government agencies and private agencies,
  - 2.15.4 Industrial establishments,
  - 2.15.5 Community Based Organizations,
- 2.16 **‘Water tables’ means** the level of water within inter-granular pores of soil or fissures of rock, below which the pores of the host are saturated;
- 2.17 Anything not defined in this regulation but is defined in the Act shall have the same meaning as defined in the Act.

### **3. Objectives**

- 3.1 The objective of the Jharkhand rainwater harvesting regulation-2017 is to ensure the (best) possible beneficial use of rainwater endowment on the entire urban areas of Jharkhand.
- 3.2 To ensure that the maximum utilization of rainfall as possible through water harvesting, either by recharging it into the groundwater aquifers or storing it for direct use.

### **4. Expected outcome of the regulation**

- 4.1 Recharge ground water.
- 4.2 Preserve and enhance surface water bodies in urban areas.
- 4.3 Provide back-up supplies during dry spell, draughts or periods of main supply break down.
- 4.4 Mitigate urban floods.
- 4.5 Improve quality of groundwater.
- 4.6 Provide environmental and ecological benefits to the urban area including fostering bio diversity.
- 4.7 Augment soil moisture for urban greenery.
- 4.8 Use of rainwater for urban aquaculture and vegetable production.

### **5. The following provisions shall be applicable for installation of Rain Water Harvesting structures**

- 5.1 Provision of Rain Water Harvesting shall be mandatory for plot of size 300 sq.mt and above .
- 5.2 The building construction could be broadly classified as per the following:
- 5.2.1 Category –(A) Building on plot size less than 300 sq.mt.
  - 5.2.2 Category- (B) buildings up to G-2 on the plot size more than 300 sq.mt.
  - 5.2.3 Category- (C) buildings G+3 and above on plot size more than 300 sq.mt

- 5.3 The Rain Water Harvesting arrangement is not mandatory for buildings with a plot size less than 300 sq.mt. However the owners of buildings are advised to construct Rain Water Harvesting structure for conservation and protection of ground water. Either they adopt traditional method or any upgrade method.
- 5.4 All the layout open spaces/amenity spaces of housing societies and new constructions / reconstruction's/ additions on plots having area not less than 300 sq. mt provided that the Authority may approve the Rain Water Harvesting structures of specifications different from those specified here with, subject to the minimum capacity of rain water harvesting being ensured in each case.
- 5.5 The owner / society of every building mentioned in the para 5.4 above shall ensure that the Rain Water Harvesting structure is maintained in good condition for storage of water for non potable purposes or recharge of groundwater at all times.
- 5.6 The Authority may impose a levy for the failure of the owner of any building mentioned in the para 5.4 above to provide or to maintain Rain Water Harvesting structures as and when required.
- 5.7 Rain Water Harvesting shall be made mandatory for every Urban Local Bodies/Planning Authority to identify, demarcate, protect and maintain the water bodies that come under their jurisdiction will prepare a list.
- 5.8 If Rain water harvesting system has not been installed in the apartments/houses having area less than 300 sq.m, constructed before 2010 and there is no space available for installation of the same, the issue will be heard and resolved by the concerned ULBs and suitable order shall be passed from case to case by the CEO/ Executive officer/special officer of the ULBs.
- 5.9 It is the responsibility of the builders of the apartments to install rain water harvesting structure, if the building is constructed on or after 2010 and occupancy certificate from the respective Municipal Corporation has not been procured. In case of construction on or after 2010 and the occupancy certificate has been procured from the municipal corporation than the owner of the flats will have combined responsibility to install rain water harvesting in the building.

## **6. Rain Water Harvesting in a building site**

Includes storage or recharging into ground the rain water falling on the terrace or on any paved or unpaved surface within the building site.

### **6.1 The following systems may be adopted for harvesting the rain water drawn from terrace and the paved surface**

- 6.1.1 Open well of a minimum of 1.00 mt.dia and 6 mt. in depth into which rain water may be channeled and allowed after filtration for removing silt and floating material. The well shall be provided with ventilating covers. The water from the open well may be used for non potable domestic purposes such as washing, flushing and for watering the garden etc.
- 6.1.2 Rain Water Harvesting for recharge of ground water may be done through a bore well around which a pit may be excavated up to a depth of atleast 3.00mt and refilled with stone aggregate and sand. The filtered rain water may be channeled to the refilled pit for recharging the bore well.

- 6.1.3 An impervious surface / underground storage tank of required capacity may be constructed in the setback or other open space and the rain water may be channeled to the storage tank. The storage tank shall always be provided with ventilating covers and shall have draw-off taps suitably placed so that the rain water may be drawn off for domestic, washing gardening and such other purposes. The storage tanks shall be provided with an overflow.
- 6.1.4 The surplus rain water after storage may be recharged into ground through percolation pits or trenches or combination of pits and trenches. Depending on the geographical and topographical condition, the pits may be of the size of 1.20 mt. width × 1.20 mt. length × 2.00 mt. to 2.50 mt. depth. The trenches can be of 0.60 mt width × 2.00 to 6.00 mt. length × 1.50 to 2.00 mt. depth. **The capacity/ volume and number of pits and trenches should depend upon the catchment area and quantity of peak rain fall of the area. It can vary from place to place.** Terrace water shall be channeled to pits or trenches. Such pits or trenches shall be back filled with filter media comprising the following materials.
- 6.1.4.1 40 mm stone aggregate as bottom layer upto 25% of the depth;
- 6.1.4.2 20 mm stone aggregate as lower middle layer upto 25% of the depth;
- 6.1.4.3 Coarse sand as upper middle layer up to 40% of the depth;
- 6.1.4.4 A thin layer of fine sand as top layer.
- 6.1.5 Top 10% of the pits / trenches will be empty and a splash pad is to be provided in this portion in such a way that roof top water falls on the splash pad.
- 6.1.6 Brick masonry wall is to be constructed on the exposed surface of pits / trenches and the cement mortar plastered.
- 6.1.7 The depth of wall below ground shall be such that the wall prevents loose soil entering into pits / trenches. The projection of the wall above ground shall at least be 15 cms.
- 6.1.8 Perforated concrete slabs shall be provided on the pits / trenches. Bund should be created to minimize the run off.
- 6.1.9 If the open space surrounding the building is not paved, the top layer upto a sufficient depth shall be removed and refilled with coarse sand to allow percolation of rain water into ground.
- 6.1.10 Any other system developed, which is technically suitable and feasible under the local circumstances and conditions, which may vary from place to place.

**6.2 In case the plots where the water table is high i.e 10 feet or less, it is not mandatory to follow the above provisions.**

- 6.2.1 The terrace shall be connected to the open well / bore well / storage tank / recharge pit / trench by means of PVC pipes through filter media. A valve system shall be provided to enable the first washings from roof or terrace catchment, as they would contain undesirable dirt. The mouths of all pipes and opening shall be covered with mosquito (insect) proof wire net. For the efficient

discharge of rain water, there shall be at least two rain water of 100 mm diameter for a roof area of 100 sq.mt.

- 6.2.2 Rain water harvesting structures shall be installed as not to endanger the stability of building or earthwork. The structures shall be designed such that no dampness is caused in any part of the walls or foundation of the building or those of an adjacent building.
- 6.2.3 The water so collected / recharged shall as far as possible be used for non-drinking and non-cooking purpose.
- 6.2.4 Provided that when the rain water in exceptional circumstances will be utilized for drinking and / or cooking purpose, it shall be ensured that proper filter arrangement and the separate outlet for by passing the first rain-water has been provided.
- 6.2.5 Provided further that it will be ensured that for such use, proper disinfectants and the water purification arrangements have been made.

## **7. Community Rain Water Harvesting**

A common rain water harvesting structure shall be installed for a cluster of houses/buildings where there is no space for making a rain water harvesting structure. It shall be the duty of each and every owner/occupier to participate in the installation and maintenance of community rain water harvesting.

## **8. Rain Gardens**

A rain garden is a functional landscaping technique that can beautify our property as well as help to filter and slow the flow of storm water. Rain gardens allow about 30% more rainwater to soak into the ground than traditional lawns.

- 8.1 Rain gardens are saucer shaped gardens that water flows into that are planted with grasses, flowers, shrubs, and sometimes small trees. They soak up water while providing wildlife habitat. The soils and basin fills with water for a short amount of time before soaking back into the surrounding soil. Plants used in these gardens are adapted to survive in short periods of flooding as well as dry soils in between storms.
- 8.2 They are strategically located to capture runoff from hard surfaces such as a driveway, parking area, sidewalk of streets. Rain gardens fill with a few inches of water after a storm and then water filters into the surrounding soil, rather than running off to the street or storm culvert.
- 8.3 Rain gardens are a very good option to help lower the impact of impervious surfaces and polluted runoff because they are low-tech, inexpensive, sustainable and aesthetically pleasing.
- 8.4. There are multiple benefits of rain garden to the community and the local environment which include:
  - 8.4.1 Reduced polluted storm water runoff from yards into local streams,
  - 8.4.2 Reduced localized flooding,
  - 8.4.3 Reduced erosion,
  - 8.4.4 Pollution prevention,
  - 8.4.5 Groundwater recharge,
  - 8.4.6 Enhanced wildlife habitat,
  - 8.4.7 Aesthetics.

**9. Awareness of stakeholders:**

- 9.1 Publication of Rain Water Harvesting guidelines and conduct awareness campaigns, Orientation programmes, etc. for various stakeholders (Bulk consumers, residents, etc).
- 9.2 To construct model demonstration project for public building, educational institutions, parks, open spaces, etc on rain water harvesting to disseminate the idea to various stakeholders.

**10. Formation of Monitoring committee at State and District level**

- 10.1 **State level Advisory Committee** will monitor the entire process of Rain Water Harvesting implementation at the State level. This committee will also comprise of a technical cell, which will provide the necessary technical support for implementation of Rain Water Harvesting. This Committee shall be chaired by the Principal Secretary, Urban Development & Housing Department and shall meet at least once in three months to review the status of implementation of Rain Water Harvesting.
- 10.2 **District level Advisory Committee** will monitor the implementation of Rain Water Harvesting at district level. The Committee shall comprise of representatives from all the concerned Government Departments involved in urban water management like Lake Development Authority, Central Ground Water Board, Mines and Geology Department, Town Planning Department and NGOs (working in water conservation), Academic institutions and field experts. This committee shall be chaired by the concerned Deputy Commissioner of the district. The committee shall be responsible to prepare, implement and monitor the town / city wise RWH Action Plans. The Committee shall meet regularly at least once in three months to review the status of implementation.

**10.3 Roles and responsibilities of the committees**

- 10.3.1 State Level Advisory Committee – Frame the State Policy, prepare Technical Guidelines, Manuals and monitor the overall implementation of RWH.
- 10.3.2 Technical Cell – Provide the necessary technical inputs for the installation of Rain water harvesting current practices, drawings, legislations, etc
- 10.3.3 District Rain Water Harvesting Committee – Formulation and implementation of RWH Action plans.
- 10.3.4 Agencies/NGOS – provide the necessary technical inputs to the District Committees and ULBs for implementation of RWH Action Plans.
- 10.3.5 Physical verification of structures would be carried out before the onset of monsoon each year. Penalty shall be charged if not properly maintained.

**11. Prohibition on digging of new tube wells/bore wells. Proper enforcement of such prohibition is required to be monitored at higher level and permission may only be given in exceptional circumstances.**

- 11.1 Power of Municipalities to use any discarded or dead tube well as recharge pit or percolation pit. The municipality may provide or cause to be used any discarded or dead tube well for use as percolation pit for any locality or for use as community Rain water harvesting system.
- 11.2 The department will prepare a list of all government buildings, which do not have rain water harvesting facilities. Such buildings will be served notices and they will be directed to implement the new structural designs at the earliest.

- 12. Incentives and disincentives mechanism** shall be designed to facilitate the implementation of Rain Water Harvesting like rebate/fine in property tax etc.
- 13. Responsibility of the household-** It shall be ensured by every household responsible for construction of Rain Water Harvesting structure that in no case polluted or waste water is let into the recharge pit as it will lead to pollution of the ground water.
- 14. Penalty:**
- 14.1 Any person found violating clause no. 13 shall be punishable as per section 340 of the Jharkhand Municipal Act 2011.
- 14.2 Occupancy certificates will not be issued to the owners of the buildings unless they produce satisfactory proof of compliance of installation of rain water harvesting.
- 14.3 The Authority shall impose fine for the failure of the owner/builders of any building to install or to maintain Rain Water Harvesting structures depending on the residential area.
- 14.4 The state government may levy incremental penalty on erring property owners/builder. The rain water harvesting unit is must in houses built on sites of 300sq.mt or more. The rule applies to properties built in the year 2010 or earlier. The penalty for the first three months is 25% of the water bill. From the fourth month the penalty becomes 50% of the water bill, which after six months becomes equivalent to water bill.
- 15. Power of the State Government**
- 15.1 Notwithstanding anything contained in the foregoing paragraphs of the **Jharkhand Rainwater Harvesting Regulation-2017** the State Government by issuance of notification in the official gazette may amend or withdraw any of the provisions and / or the schemes mentioned herein above.
- 15.2 **Interpretation** - Should any doubt arise as to the interpretation of any of the provisions of these Rules, the matter shall be referred to the Urban Development and Housing Department, whose decision thereon shall be final.

By the order of the Governor of Jharkhand,

**Arun Kumar Singh,**  
Principal Secretary to Government,  
Urban Development and Housing Department.

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